

## SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

## Improvements in or relating to Brackets for Attaching Cap-Lamps to Miners' Helmets

We, JOHN T. MOSS LIMITED, a British Company of, Church Street, Holloway, Matlock, Derbyshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to brackets for attaching cap-lamps to miners' helmets.

In one embodiment of a bracket we provide a tongue for engagement in a slot of one of a cap-lamp and a miner's helmet, portions defining a slot for engaging a tongue on the other of a cap-lamp and a miner's helmet, and means interconnecting said tongue and said portions and providing a joint which is pivotal against friction for the relative displacement of said tongue and said portions.

In another embodiment of a bracket we provide, instead of one of said tongue and said slot, means capable of being secured to a cap-lamp or miner's helmet and a member substantially of U-shape the limbs of which are frictionally pivoted at said joint and the bight of which can abut a miner's cap-lamp or helmet, when said means are secured thereto, so as to resist relative rotation between the cap-lamp or helmet and the member.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:—

Figure 1 is a perspective view of a bracket for attaching a cap-lamp to a miner's helmet,

Figure 2 shows an exploded view of the parts of the bracket shown in Figure 1.

Figure 3 is a perspective view of a bracket combined with a cap-lamp, and

Figure 4 shows an exploded view of parts of the bracket shown in Figure 3.

The bracket illustrated in Figures 1 and 2 is formed basically of two sheet metal members, 1 and 2, which are pivotally interconnected in a frictional manner.

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The member 1 is angled to provide a tongue portion 3 designed to slide into and be engaged by a clip on, or a slot formed in, a miner's helmet. Most miner's helmets are provided with such a clip or slit for the direct connection of a cap-lamp. To assist in the retention of the tongue portion 3 in such a clip or slot, the tongue portion 3 is embossed as indicated at 4, this embossing also increasing the strength and rigidity of the angled member 1. In order that the member 1 may be pivotally connected to the member 2, downwardly projecting portions 5 are provided on the member 1, these portions containing aligned apertures 6 for receiving a bolt 7.

The member 2, of substantially U-shape, has limbs containing aligned apertures 8 also receiving the bolt 7. These apertures 8 are provided in outwardly embossed portions 9 of the limbs of the member 2.

Means for attaching the bracket to a tongue provided on a cap-lamp are provided by a member 10 of substantially U-shape mounted between the limbs of the member 2 and provided with aligned apertures 11 formed in inwardly directed bosses 12 of the limbs of the member 10. These apertures also receive the bolt 7. The bights of the members 2 and 10 are closely spaced providing a slot for the reception of the tongue of a cap-lamp. The member 10 is provided in each of its limbs with slots 13 which extend slightly into the bight of the member 10 and which guide partially cut-out and inwardly pressed-in portions 14 of the limbs of the member 2. This arrangement ensures that the member 10 is held in its correct position with respect to the member 2 whilst allowing the member to be displaced slightly to vary the size of the slot. One limb of the member 10 is provided with an extension 15 preventing undue rotational displacement of the member 1 with respect to the members 2 and 10. Whilst the bight of the member 2 is flat, the bight of the member 10 is bent in a direction towards the bight

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## WHAT WE CLAIM IS:—

1. A bracket for attaching a miner's cap-lamp to a miner's helmet, the bracket comprising a tongue for engagement in a slot of one of a cap-lamp and a miner's helmet, portions defining a slot for engaging a tongue on the other of a cap-lamp and a miner's helmet, and means interconnecting said tongue and said portions and providing a joint which is pivotal against friction for the relative displacement of said tongue and said portions.
2. A bracket according to claim 1, wherein said tongue is of such a size that, if it were separate from the bracket, it could engage in said slot defined by said portions.
3. A bracket according to claim 1 or 2, and which is attached to a miner's helmet by said tongue or slot.
4. A bracket according to claim 1 or 2 and which is attached to a miner's cap-lamp by said tongue or slot.
5. A bracket according to claim 1 or 2, and which is attached to a miner's helmet by one of said tongue and said slot and to a miner's cap-lamp by the other of said tongue and said slot.
6. A bracket according to any one of the preceding claims, wherein the joint has a connecting member on which a wing nut is threaded, the degree of friction of said joint being determined by the position of the wing nut on the connecting member.
7. A modified form of the bracket according to any one of the preceding claims, in which one of said tongue and said slot is replaced by means capable of being secured to a miner's cap-lamp or miner's helmet and a member substantially of U-shape the limbs of which are frictionally pivoted at said joint and the bight of which can abut a miner's cap-lamp or miner's helmet, when said means are secured thereto, so as to resist relative rotation between the cap-lamp or helmet and the member.
8. A bracket according to claim 7, wherein said means comprises two portions connected to the joint and between which the U-shape member is disposed with its limbs extending generally parallel to said two portions.
9. A bracket according to claim 8, wherein there are inter-engagement means allowing relative movement between the two portions and the U-shaped member only in two opposite directions generally parallel to the length of the limbs.
10. A bracket according to claim 9, wherein the inter-engagement means comprises a slot in one of said means and said member and a projection, engaging said slot, provided on the other of said means and said member.
11. A bracket according to claim 6 and any one of claims 7 to 10, wherein a tube is mounted upon the connecting member and between the limbs of the U-shaped member.
12. A bracket according to any one of claims 7 to 11, and having a tongue coupled to said means by said joint.
13. A bracket according to claim 12, wherein the tongue is embossed to assist its retention in a slot of a cap-lamp or helmet.
14. A bracket according to any one of claims 7 to 11, and having a slot coupled to said means by said joint.
15. A bracket according to claim 14, and having a second and a third member substantially of U-shape, the limbs of which second and third members are pivotally connected at the joint and one of which second and third members is disposed between the limbs of the other so as to define said slot between the bights of the second and third members.
16. A bracket according to claim 15, wherein said second and third members are provided with inter-engagement means allowing relative movement only in two opposite directions and between at least the bights of these members.
17. A bracket according to claim 16, wherein said interengagement means comprise a slot in a limb of one of said second and third members and a projection, engaging said slot, provided on a limb of the other of said second and third members.
18. A bracket according to claim 6 and any one of claims 15 to 17, wherein a limb of the outer of said second and third members is provided with an outwardly projecting boss through which the connecting member extends, the outer face of the boss abutting the wing nut.
19. A bracket according to claims 11 and 18, wherein each limb of the inner one of said second and third members is provided with an inwardly projecting boss through which the connecting member extends, the inner faces of the bosses engaging respective ends of the tube.
20. A bracket according to any one of claims 15 to 19, wherein the third member is constructed from a resilient material.
21. A bracket *per se* or in combination with a miner's helmet and/or a cap-lamp, substantially as hereinbefore described with reference to Figures 3 and 4 of the accompanying drawings.

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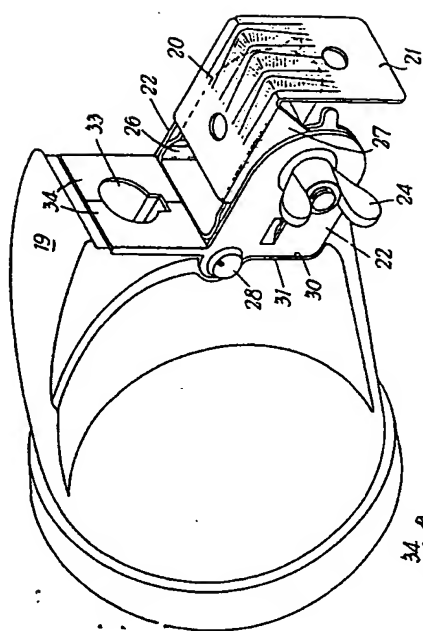


FIG. 1

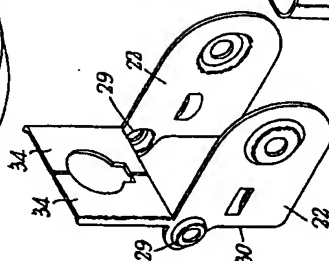


FIG. 2

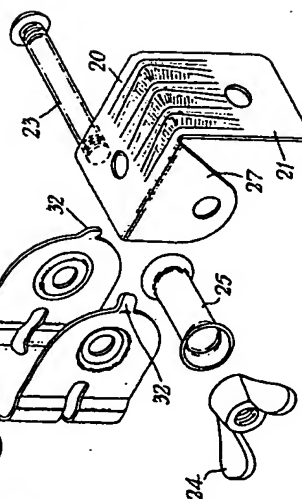


FIG. 3

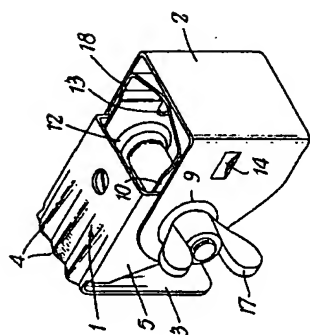


FIG. 4

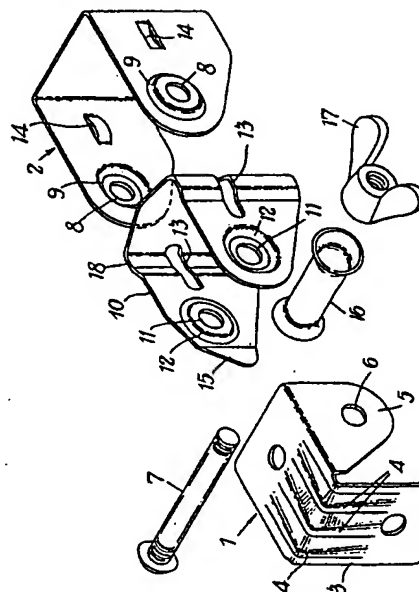


FIG. 5